IN THE CLAIMS

1. (Currently Amended) A method for crosslinking one or more molecules, comprising

photoactivating a photactivatable crosslinker in the presence of the one or more molecules by multi-photon excitation, wherein the crosslinker comprises at least two photoactive groups covalently linked by a bridging moiety, and further wherein the point volume of the activation has at least one dimension of less than about 1 micron; and

crosslinking the one or more molecules with the activated crosslinker,

wherein the crosslinking produces a three-dimensional structure built up from elements with point volumes having at least one dimension of less than about 1 micron; and

wherein the photoactive groups are selected from the group consisting of benzophenones, triazines, chromophore-substituted halomethyl-s-triazines, pyrazines, pyrimidines, pyradizines, benzotriazoles, nitrobenzenes, phenyldiazenes, pyridazine diones, phthalazine diones, and a combination comprising at least one of the foregoing photoactive groups..

2. (Cancelled)

3. (Original) The method of claim 1, wherein the photoactivatable crosslinker is substantially water-soluble.

4. (Original) The method of claim 3, wherein the photoactivatable crosslinker comprises at least one acid or acid salt.

5. (Original) The method of claim 4, wherein the acid salt is the alkali or alkaline earth metal salt of a carboxylate, formate, nitrate, phosphate, phosphonate, phosphinate, sulfate, sulfonate, or a combination comprising at least one of the foregoing.

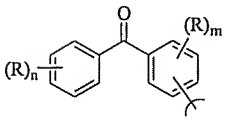
6. (Withdrawn) The method of claim 3, wherein the photoactivatable crosslinker comprises at least one base or base salt.

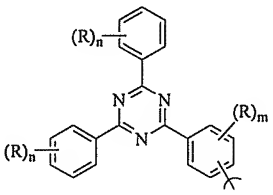
7. (Original) The method of claim 3, wherein the photoactivatable crosslinker comprises at least one group capable of hydrogen bonding with water.

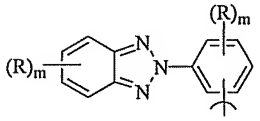
8. (Previously Presented) The method of claim 1, wherein the photoactivatable crosslinker has the structure (I)

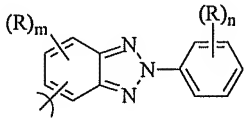
$$A_1\text{-}L_1\text{-}Q\text{-}L_2\text{-}A_2 \qquad (I)$$

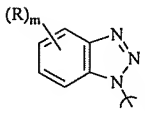
wherein A_1 and A_2 are the same or different, , and wherein A_1 and A_2 comprise

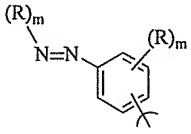
 (II),

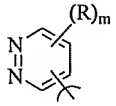
 (III),

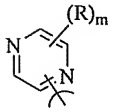
 (IVa),

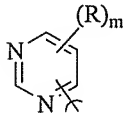
 (IVb),

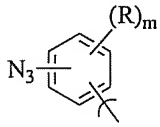
 (IVc),

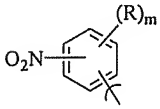
 (V),

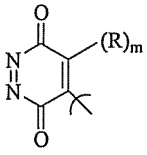
 (VIa),

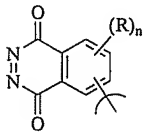
 (VIb),

 (VIc),

 (VII),

 (VIII),

 (IX),

 (X),

or a mixture comprising at least one of the foregoing structures, wherein

each R in the formulas are independently selected from an ionic moiety; a saturated or unsaturated, substituted or unsubstituted $C_{1\text{-}36}$ alkyl, saturated or unsaturated, substituted or unsubstituted $C_{3\text{-}36}$ cycloalkyl, substituted or unsubstituted $C_{6\text{-}36}$ aryl, or substituted or unsubstituted $C_{7\text{-}42}$ alkylaryl; two R groups together may form a fused cyclic or heterocyclic

group such as a cycloalkyl or aryl; a halogen, hydroxyl, amino, substituted amino, amide, alkoxy, carboxyl, carboxy ester, phosphate ester, phosphonate ester, sulfate ester, sulfonate ester, sulfhydryl group, or hydrocarbonoxy group optionally comprising one of the foregoing hydrocarbon groups

n is 0 to 5 and m is 0 to 4;

L_1 and L_2 are linking groups; and

Q is a bridging moiety.

9. (Original) The method of claim 8, wherein the bridging moiety is a divalent, saturated or unsaturated, substituted or unsubstituted C_{1-36} alkyl, saturated or unsaturated, substituted or unsubstituted C_{3-36} cycloalkyl, saturated or unsaturated, substituted or unsubstituted C_{3-36} methylcycloalkyl, C_{6-36} aryl, C_{7-42} alkylaryl, C_{7-42} aralkyl, C_{1-18} heterocycle, a polyalkylene glycol, polyolefin, polybutadiene, polyisoprene, polyamide, polyester, polysulfone, polyimide, polyamideimide, polysiloxane, polyetherimide, polyether sulfone, polyphenylene sulfide, polyether ketone, polyether ether ketone, polystyrene, polyacrylate, polyacrylonitrile, polyacetal, polycarbonate, polyphenylene ether, polyurethane, polyvinylidene chloride, fluoropolymer, peptide, oligopeptide, oligonucleotide, saccharide, polysaccharide, fatty acid, or lipid.

10. (Previously Presented) The method of claim 8, wherein the photoactivatable crosslinker comprise an acid or acid salt.

11. (Original) The method of claim 1, wherein the molecule is an amino acid, peptide, oligopeptide, protein, enzyme, myosin, collagen, fatty acid, lipid, ribonucleic acid, deoxyribonucleic acid, oligomer, saccharide, polysaccharide, glycosaminoglycan, cellulose, cytokine, hormone, receptor, growth factor, drug or a mixture comprising at least one of the foregoing molecules.

12-13. (Cancelled) .

14. (Withdrawn-Currently Amended) A product derived by the method of claim 1 ~~or claim 12~~.

15-27. (Cancelled)

28. (New) A method for crosslinking one or more molecules, comprising

photoactivating a photactivatable crosslinker in the presence of the one or more molecules by multi-photon excitation, wherein the crosslinker comprises at least two photoactive groups covalently linked by a bridging moiety, and further wherein the point volume of the activation has at least one dimension of less than about 1 micron; and

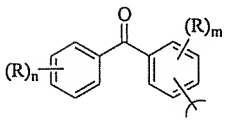
crosslinking the one or more molecules with the activated crosslinker,

wherein the crosslinking produces a three-dimensional structure built up from elements with point volumes having at least one dimension of less than about 1 micron; and

wherein the photoactivatable crosslinker has the structure (I)

$$A_1\text{-}L_1\text{-}Q\text{-}L_2\text{-}A_2 \qquad (I)$$

wherein A_1 and A_2 are the same or different, , and wherein A_1 and A_2 comprise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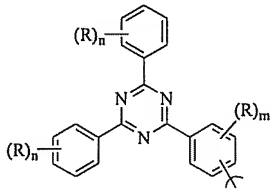
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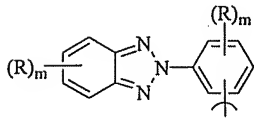
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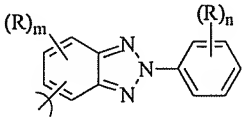
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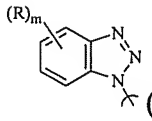
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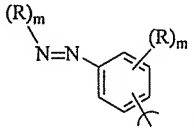
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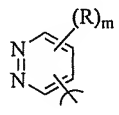
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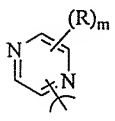
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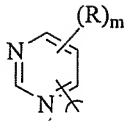
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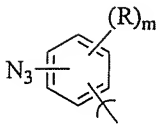
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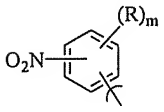
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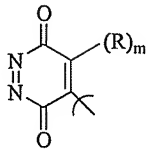
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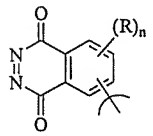
(X),

or a mixture comprising at least one of the foregoing structures, wherein

each R in the formulas are independently selected from an ionic moiety; a saturated or unsaturated, substituted or unsubstituted C_{1-36} alkyl, saturated or unsaturated, substituted or unsubstituted C_{3-36} cycloalkyl, substituted or unsubstituted C_{6-36} aryl, or substituted or unsubstituted C_{7-42} alkylaryl; two R groups together may form a fused cyclic or heterocyclic group such as a cycloalkyl or aryl; a halogen, hydroxyl, amino, substituted amino, amide, alkoxy, carboxyl, carboxy ester, phosphate ester, phosphonate ester, sulfate ester, sulfonate ester, sulfhydryl group, or hydrocarbonoxy group optionally comprising one of the foregoing hydrocarbon groups

n is 0 to 5 and m is 0 to 4;

L_1 and L_2 are linking groups; and

Q is a bridging moiety.

29. (New) The method of claim 28, wherein the bridging moiety is a divalent, saturated or unsaturated, substituted or unsubstituted C_{1-36} alkyl, saturated or unsaturated, substituted or unsubstituted C_{3-36} cycloalkyl, saturated or unsaturated, substituted or unsubstituted C_{3-36} methylcycloalkyl, C_{6-36} aryl, C_{7-42} alkylaryl, C_{7-42} aralkyl, C_{1-18} heterocycle, a polyalkylene glycol, polyolefin, polybutadiene, polyisoprene, polyamide, polyester, polysulfone, polyimide, polyamideimide, polysiloxane, polyetherimide, polyether sulfone, polyphenylene sulfide, polyether ketone, polyether ether ketone, polystyrene, polyacrylate, polyacrylonitrile, polyacetal, polycarbonate, polyphenylene ether, polyurethane, polyvinylidene chloride, fluoropolymer, peptide, oligopeptide, oligonucleotide, saccharide, polysaccharide, fatty acid, or lipid.

30. (New) The method of claim 28, wherein the photoactivatable crosslinker comprise an acid or acid salt.

31. (New) The method of claim 28, wherein the molecule is an amino acid, peptide, oligopeptide, protein, enzyme, myosin, collagen, fatty acid, lipid, ribonucleic acid, deoxyribonucleic acid, oligomer, saccharide, polysaccharide, glycosaminoglycan, cellulose, cytokine, hormone, receptor, growth factor, drug or a mixture comprising at least one of the foregoing molecules.